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(54) Title: METHOD AND APPARATUS FOR THE SEPARATION OF FLUORESCENCE AND ELASTIC SCATTERING PRODUCED BY BROADBAND ILLUMINATION USING POLARIZATION DISCRIMINATION TECHNIQUES

(57) Abstract: An apparatus for separating fluorescent light from light elastically scattered/reflected from a material illuminated with a broadband illumination source includes a polarization discriminator, which separates the substantially polarized elastically scattered/reflected light from the unpolarized fluorescent light, and a spectrometer to analyze the full and separated reflectance spectra. A linear polarizer may be provided to polarize the illumination source. A method for separating fluorescence light induced in a material by broadband light from an elastic scattering/reflection component includes providing polarization discrimination to separate the components, the fluorescence light being substantially unpolarized, and spectrally analyzing the reflectance components. The method may include linearly polarizing the light source. A fluorescence spectra may be extracted from a minimum reflectance spectra or from a residual polarization reflectance spectra.